

**REMARKS****Summary of the Office Action**

The Specification has been objected to for various informalities.

The Drawings have been objected to because all the text labels regarding the function blocks in Figs. 1-5 are missing.

Claims 3, 4, 14, and 15 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention.

Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite.

Claims 1-7 and 10 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 5,641,927 to *Pawate* in view of U.S. Patent No. 5,915,237 to *Boss et al.*

Claim 8 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.*, and further in view of U.S. Patent No. 5,857,171 to *Kageyama et al.*

Claim 9 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.*, and further in view of U.S. Patent No. 5,712,437 to *Kageyama et al.* (hereinafter *Kageyama et al.*-2).

Claims 11-18 and 21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.*, and further in view of U.S. Patent No. 7,099,704 to *Taniguchi et al.*

Claim 19 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.* and *Taniguchi et al.*, and further in view of *Kageyama et al.*

Claim 20 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.* and *Taniguchi et al.*, and further in view of *Kageyama et al.*-2.

#### **Summary of the Response to the Office Action**

Applicants respectfully traverse the rejections under 35 U.S.C. § 112, first paragraph.  
Applicants respectfully traverse the rejections under 35 U.S.C. § 112, second paragraph.  
Applicants respectfully traverse the rejections under 35 U.S.C. § 103(a). Accordingly, claims 1-21 are presently pending for further consideration.

#### **Information Disclosure Statement**

Applicants submitted an Information Disclosure Statement on March 18, 2004.  
Applicants thank the Examiner for acknowledging the Information Disclosure Statement by initialing the PTO 1449 form and returning a copy to Applicants.

#### **Objection to the Drawings**

The Drawings have been objected to because all the text labels regarding the function blocks in Figs. 1-5 are missing. Applicants respectfully request that the Examiner clarify the objection to the Drawings as the instant application contains only one (1) figure.

#### **Objection to the Specification**

The Specification has been objected to for various informalities. Each of the objections is addressed below.

First, the Office Action alleges that the term “digital sung signal” is unclear. Applicants respectfully disagree. The term digital sung signal is described throughout Applicants’ specification. For example, the Abstract of the Disclosure states that “a first portion of the

digital speech signal is mixed with a first portion of the digital music signal to produce a digital sung signal.” Accordingly, Applicants respectfully request that this objection to the Specification be withdrawn.

Second, the Office Action alleges that the described mixer means 4 lacks reasonably clear description for implementing it. Applicants respectfully disagree. Mixer is a term of art known to those skilled in the art. Therefore, Applicants respectfully request that the Examiner clarify the objection. Otherwise the objection should be withdrawn.

Third, the Office Action alleges that the statement “replace the fundamental frequency of and the harmonics of the voice signal by the fundamental frequency and the harmonics of each of the notes of the music signal during the note” directly conflicts the statement “a portion Y% of a musical sinusoidal signal deduced from the signal S2 is substituted for a portion X% of the speech sinusoidal signal.” See Specification page 5, line 28 to page 6, line 2. Applicants respectfully disagree, and request that the Examiner clarify the alleged conflict. Otherwise the objection should be withdrawn.

Fourth, the Office Action alleges that the statement “said peak power corresponding to the fundamental frequency of a vowel” is not true. See Specification page 6, lines 29-34. Applicants respectfully disagree, and request that the Examiner clarify the objection. Otherwise the objection should be withdrawn.

Fifth, the Office Action alleges that the VAD forcing the mixer is logically or structurally incorrect because the mixer 4 processes signals before the vocoder 6. Applicants respectfully disagree. Applicants Specification provides that the VAD may (emphasis added) force the mixer means to move on to the next note. Accordingly, the objection should be withdrawn.

**All Claims Comply With 35 U.S.C. § 112, first paragraph**

Claims 3, 4, 14, and 15 stand rejected under 35 U.S.C. §112, first paragraph, as allegedly containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to make and/or use the invention.

The Office Action alleges that the claimed means for replacing the fundamental frequency of said speech signal by the fundamental frequency associated with a note of a music signal lacks enablement to one of ordinary skill in the art based on the disclosure of the specification. Applicants respectfully disagree. The Office Action also states that “it is well known in the art that the range of fundamental frequencies of human speech is much narrower than that of musical instruments.” Applicants request that the Examiner clarify the rejection 35 U.S.C. §112, first paragraph, because a feature that is allegedly well known should be enabled to one of ordinary skill in the art. Otherwise the rejection should be withdrawn.

**All Claims Comply with 35 U.S.C. § 112, second paragraph**

Claims 1-21 stand rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. Applicants respectfully traverse the rejection for the following reasons.

The Office alleges that the claimed term digital sung signal is indefinite because it is unclear what the term really is and the term is not commonly accepted in the art and lacks clear description in the specification. Applicants respectfully disagree.

The term digital sung signal is described throughout Applicants' specification. For example, the Abstract of the Disclosure states that “a first portion of the digital speech signal is mixed with a first portion of the digital music signal to produce a digital sung signal.” Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. § 112, second paragraph, be withdrawn.

**Rejections Under 35 U.S.C. § 103(a)**

Claims 1-7 and 10 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.* Claim 8 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.*, and further in view of *Kageyama et al.* Claim 9 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.*, and further in view of *Kageyama et al.*-2. Claims 11-18 and 21 stand rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.*, and further in view of *Taniguchi et al.* Claim 19 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.* and *Taniguchi et al.*, and further in view of *Kageyama et al.* Claim 20 stands rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over *Pawate* in view of *Boss et al.* and *Taniguchi et al.*, and further in view of *Kageyama et al.*-2. Applicants respectfully traverse the rejection for at least the following reasons.

The applied prior art, whether taken alone or in combination, fails to teach or suggest all the recited features of independent claims 1 and 11. As originally presented, independent claims 1 and 11 recite, *inter alia*, means for storing a set of coded data representing a musical score comprising a set of notes, each note being defined by a fundamental frequency, a duration, and an instrument that plays said note. *Pawate*, *Boss et al.*, and *Taniguchi et al.*, whether taken alone or in combination, fail to teach or suggest at least these features of claims 1 and 11.

The Office Action equates column. 2, lines 54-67 of *Pawate* with the claimed means for storing a set of coded data representing a musical score comprising a set of notes, each note being defined by a fundamental frequency, a duration, and an instrument that plays said note. Column. 2, lines 54-67 of *Pawate* states the following:

In accordance with one embodiment of Applicant's invention, the pitch of the Karaoke user's voice is determined by pitch estimator 23 and averaging the results at averaging circuit 25. The pitch of the artist's vocal can be similarly determined by a pitch estimator 27 and averaging circuit 28, or by entering the key of the song or background music which may be available on the song package or enclosed literature. The key of the music may also be stored in the CD data field so not have to be computed. The pitch estimated and averaged from the original artist's voice or key from the background music or that from the CD data field is compared to the averaged pitch of the Karaoke singer's voice from average circuit 25 at comparator 29 to determine the mismatch between the two pitches, and based ...

At most, *Pawate* discloses that a key of the music is stored in a CD data field. Thus, *Pawate* does not disclose each note being defined by a fundamental frequency, a duration, and an instrument that plays, as claimed. Accordingly, *Pawate* fails to teach or suggest each and every feature of claims 1 and 11. *Boss et al.* and *Taniguchi et al.* do not cure this deficiency in *Pawate*. Thus, the rejection of claims 1 and 11 should be withdrawn.

As pointed out in M.P.E.P. § 2143.03, all the claimed limitations must be taught or suggested by the prior art to establish *prima facie* obviousness of a claimed invention. Because *Pawate*, *Boss et al.*, and *Taniguchi et al.*, whether taken alone or in combination, fail to teach or suggest each feature of independent claims 1 and 11, the rejection under 35 U.S.C. § 103(a) should be withdrawn. Furthermore, claims 2-10 and 12-21 depend from one of independent claims 1 or 11. Accordingly, claims 2-10 and 12-21 are also allowable because of the additional features they recite and the reasons stated above.

### **CONCLUSION**

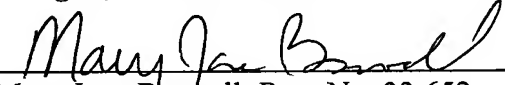
In view of the foregoing, Applicants respectfully request reconsideration and the timely allowance of the pending claims. Should the Examiner feel that there are any issues outstanding after consideration of the Response, the Examiner is invited to contact the Applicants'

undersigned representative to expedite prosecution.

**EXCEPT** for issue fees payable under 37 C.F.R. § 1.18, the Commissioner is hereby authorized by this paper to charge any additional fees during the entire pendency of this application including fees due under 37 C.F.R. §§ 1.16 and 1.17 which may be required, including any required extension of time fees, or credit any overpayment to Deposit Account No. 50-0310. This paragraph is intended to be a **CONSTRUCTIVE PETITION FOR EXTENSION OF TIME** in accordance with 37 C.F.R. § 1.136(a)(3).

Respectfully submitted,  
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